Valley Branch Watershed District

Revised Rules and Regulations

December 2013

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Forward

Introduction

This forward summarizes the reasoning behind the proposed Valley Branch Watershed District (VBWD) Rules and Regulations (Rules). The forward discusses

- the process for developing the Rules,
- the authority allowing VBWD to develop and adopt the Rules,
- the need for the Rules, and
- the justification for the Rules.

The organization of the Rules is also described.

These Rules are an update and revision from the VBWD's 2007 Rules. On November 10, 2005, the VBWD Board of Managers adopted the 2005-2015 *VBWD Watershed Management Plan* (Plan). The Plan called for the revision of the VBWD Rules to incorporate volume control standards, revise the wetland regulations, and update the Rules in general.

On August 30, 2013, the VBWD Managers sent the proposed Rules to the Minnesota Board of Water and Soil Resources and all public transportation authorities that have jurisdiction within the VBWD, as required in Minnesota Statute 103D.341, Subd. 2. In addition, the proposed Rules were sent to various stakeholders, including all cities and townships that lie wholly or partially within the VBWD. The VBWD requested comments by October 21, 2013.

As required in Minnesota Statute 103D.341, Subd. 2, the VBWD Managers published notice of a public hearing on the proposed rules. The public hearing was held on December 12, 2013, at 8:00 p.m. After the public hearing and later that evening, the VBWD Managers adopted these rules.

These rules will be published in the VBWD's legal newspapers. The Managers will provide written notice of adopted or amended rules to public transportation authorities that have jurisdiction within the watershed district. The Managers will also file these adopted rules with the county recorder of each county affected by the watershed district and the Minnesota Board of Water and Soil Resources.

Authority

State law (Minnesota Statutes 103B and 103D and Minnesota Rules 8410) requires watershed districts to prepare and adopt watershed management plans. These plans must be the basis for watershed district Rules. Minnesota Statutes (103D, 103B, and 103G) and Minnesota Rules (8410 and 8420) give watershed districts the authority to develop and implement rules and regulations. The VBWD's authority to adopt these Rules allows it to establish standards, requirements, and procedures for the review and approval or disapproval of activities within its mandated authority.

Need

The lakes, ponds, streams, wetlands, and groundwater in the VBWD are important assets. These resources supply recreational and aesthetic benefits, enhance property values, serve as sources for groundwater recharge and drinking water, provide nutrient removal, and provide wildlife habitat and fishery resources. The high quality of the VBWD's natural resources makes it an attractive place for people to live. If water quality becomes degraded, a water resource will lose its value. If water quality is not maintained, it is not just the environment that will suffer, but the commercial and recreational value of our water resources will diminish and public health may be compromised. Preserving the high quality of the VBWD's natural resources is critical to the existence of a high quality of life among the citizens residing in the watershed and in the larger metropolitan region.

The quality of lakes, ponds, streams, wetlands, and groundwater are closely linked to the surrounding environment and land use. The quality of these water resources is dependent on the watershed's hydrology and the physical conditions of the resource. Hydrology is dependent on the weather, the topography of the landscape, the soils, the land cover, and other factors. Changes to any of these factors will influence the water quality of a water resource. While some of the factors are difficult to control, changes to land cover can be regulated.

To accomplish the VBWD goals of protecting water resources and preventing negative consequences, the VBWD will manage stormwater runoff, erosion and sedimentation, wetlands and vegetative buffers through enforcing these Rules.

Justification

The quality and quantity of water in a water body is greatly influenced by stormwater runoff. Stormwater runoff carries pollutants that cause adverse environmental impacts to the VBWD's water resources. As development in the VBWD increases, more and more land will be converted into impervious surfaces, such as buildings/rooftops, driveways, sidewalks, roads, and parking lots. These surfaces cannot absorb stormwater (cannot infiltrate), which means that as runoff flows over these surfaces; it picks up pollutants and gains speed and volume. When compared to land with less impervious surfaces, these stormwater flows contain more pollutants, are a higher temperature, move at a faster rate, and contain more volume. The downstream impacts of such flows include water quality degradation, increased erosion and sedimentation, increased flooding, wetland habitat degradation, and negative groundwater effects.

Human activities (especially construction and the removal of vegetation) often accelerate the natural process of erosion and sedimentation. For example, when a construction site is cleared and graded, stormwater runoff rates and volumes increase because there is less infiltration, less interception, fewer natural depressions, and compacted soil. This results in increased erosion, sedimentation, and decreased infiltration. Increased soil erosion releases significant amounts of sediment that may enter receiving lakes, streams, ponds, and wetlands. Sediment deposition decreases water depth, degrades water quality, smothers fish and wildlife habitat, and degrades aesthetics. Sedimentation can also cause flooding when it blocks portions of the stormwater system. Suspended sediment clouds water resources and disturbs aquatic habitats.

Sediment is also a major source of phosphorus. Scientific studies show that phosphorus is usually the nutrient that limits algal growth in freshwaters. Reducing phosphorus in a lake, therefore, is required

to reduce algal abundance and improve water transparency. Failure to reduce phosphorus concentrations will allow the water body to degrade at an unnatural, accelerated rate.

Human activities can affect the amount of water in water bodies. When too much water enters lakes, ponds, wetlands, and streams, they exceed their storage or conveyance capacity and flood. Flooding has the potential for causing severe damage and great property loss. Past and potential future impacts of flooding in the watershed include damage to structures, utilities and transportation facilities, flood fighting costs, post-flood cleanup costs, business losses, increased expenses for normal operating and living during a flood situation, and benefits paid to owners of flood insurance. Other losses that could be suffered during flooding include a loss of life, disruption of normal activities, potential health hazards from contaminated water supplies, dislodged fuel storage tanks, and flooding of wastewater collection and treatment facilities. Without controls, increased urbanization of a watershed will cause average annual flood damages to increase.

Conversely, a lack of water can have negative effects on water resources. Maintaining an adequate amount of water is important for human enjoyment of the water resources, and for maintaining wildlife habitat and fishery resources.

Human activities can negatively impact wetlands. Excavation, filling, and activities that change the hydrology and the quality of the stormwater flowing into the wetlands can destroy the wetland functions and values. Wetlands come in many different shapes, sizes, and types, and perform a variety of physical, chemical, and ecological functions. A healthy watershed is one in which wetlands are an integral part of the ecosystem.

Groundwater quality and quantity is closely linked to the surface environment. Because most VBWD residents obtain their drinking water from groundwater, it is especially important to ensure that these aquifers are uncontaminated, protected from future contamination and provide adequate supplies. Several VBWD water bodies are groundwater-dependent and need an adequate supply of clean groundwater to maintain water levels and sustain their natural habitats. Maintaining a clean, safe groundwater supply is critical to human and environmental health and to the economic and social vitality of our communities. Groundwater can be contaminated by a number of human activities. When groundwater contamination occurs, water suppliers (public and private) experience added financial and social costs to manage the affected water supply.

Organization

These Rules and Regulations are split into 13 Rules. In general, they follow the suggested format of Washington County's 2003 report, "Comparative Review of Watershed District Rules and Recommendations for Standardization." However, some Rules were grouped together because the VBWD policies and standards are too inter-related to separate. In other cases, VBWD does not have a specific policy or standard for a topic listed in the Washington County report; therefore, VBWD has no rule on that topic.

Purposes

Policies

1. To implement the purposes for which the Valley Branch Watershed District (VBWD) was created.

2. To carry out the vision and mission contained in the VBWD *Watershed Management Plan* (Plan), which are

   VBWD Vision:
   Always be careful stewards of the water resources within our watershed boundaries.

   VBWD Mission:
   To manage and protect our water resources: lakes, ponds, creeks, streams, wetlands, drainages, and groundwater by:

   A. Promoting open communication with our constituents, both our citizen base and pertinent governmental units.

   B. Improving and protecting the quality of water for all water bodies within the VBWD.

   C. Managing the quantity of water and minimizing the negative impact on the VBWD from floods, high flows, and droughts by providing public works projects and other prudent measures.

   D. Understanding the effects of community growth and other activities on groundwater, initially focusing on the groundwater-surface water interface.

   E. Continuing to enforce the Wetland Conservation Act requirements as the responsible local unit of government[1].

   F. Educating our constituents and the local units of government within the VBWD on water quality and quantity issues, management, and means of improvement.

3. To carry out the policies contained in the VBWD Plan.

4. To coordinate the VBWD's activities with other governmental agencies.

5. To ensure that the water resources are considered, protected and preserved within the VBWD.

[1] The Local Government Unit (LGU) on state land is the agency with administrative responsibility for the land.

6. To ensure that future regional water management needs are considered in the development of individual subdivisions and other developments and local water management plans.

7. To protect the public health, safety and welfare.

Purpose of Standards

1. To aid the Managers in their review process.

2. To provide the Managers' staff with the criteria to be used for their reviews and recommendations.

3. To inform permit applicants of the criteria against which their proposed developments will be reviewed.

4. To provide the communities with guidelines for the development of local water management plans.

Application

1. General activities that require a VBWD permit:

   A. Land alterations, such as grading or filling (including re-development projects), which disturb, remove or cover surface vegetation or other surfaces of 1 acre or more;

   B. All projects which create a new and/or fully-reconstructed impervious surface area of 6,000 square feet or more,

      Notes:

      i. Pavement, utility, and other projects that alter 6,000 square feet or more of the underlying soils (e.g., soils under a road's sand or gravel base, soils under a building's foundation, etc.) require a VBWD permit and conformance to Rule 2.

      ii. Pavement milling and overlay projects and pavement rehabilitation projects not altering the underlying soils (i.e., soils under the pavement's sand or gravel base) do not require a VBWD permit.

      iii. Bridges that create 6,000 square feet or more of impervious surface require a permit. Bride re-decking projects where no other ground is disturbed and the project does not involve another activity requiring a VBWD permit are exempt for needing a VBWD permit. Bridges and bridge replacements creating less than 6,000 square feet of impervious surface require a permit if the project involves another activity requiring a VBWD permit.

   C. All work within the waters and floodplain of the VBWD;

D. All projects which result in a discharge of municipal or industrial water or wastewater to a surface water drainage system;

Note:

Open loop geothermal systems are prohibited.

E. All subdivisions, plats, developments, and lot line modifications;

F. All projects which result in lake, stream, wetland, or pond augmentation; and

G. All projects which impact a wetland.

Note:

Valley Branch Watershed District is the Local Governmental Unit (LGU) responsible for administering the Wetland Conservation Act (WCA) within the VBWD, except the LGU responsible for administering the WCA on state land is the agency with responsibility for the land.

General Policies

1. To implement the purposes of these Rules and Regulations, the Managers intend to do the following:

   A. Assist municipal officials in the preparation of local watershed management plans and land development guides.

   B. Review permit applications and required supporting documents for activities listed within these Rules and for permit applications filed with the Minnesota Department of Natural Resources pursuant to Minnesota Statutes Chapter 103G. The Managers desire to become informed of improvements and land development proposals during the early planning stages. It is the intent of the Managers that the communities be the primary vehicles for directing developers to submit proposed improvement plans to the VBWD. The VBWD will review proposed improvements when the appropriate community is aware of the improvement proposal.

   C. Exercise control over proposed developments only to the extent necessary to protect the waters of the VBWD from unreasonable impacts which are inconsistent with the policies contained in the Plan and these Rules.

   D. Submit to the communities the VBWD comments, recommendations, requirements, and all VBWD actions regarding proposed improvements. All VBWD requirements shall be included in the community permits.

   E. Coordinate the VBWD review with the communities and, when appropriate, with Counties, Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, and other appropriate local, State, and Federal agencies.

2. All permits issued by the VBWD shall remain valid unless: (1) the work is not initiated within one year of permit issuance, (2) work is idle for 12 consecutive months, or (3) work is not completed within 3 years of permit issuance date.

Key Definitions and Acronyms

For the purposes of these Rules, the following words have the meanings set forth below. References in these Rules to specific sections of the Minnesota Statutes include any amendments, revisions, or recodification of those sections.

Agricultural activity – the use of land for the production of agronomic, horticultural, or silvicultural crops, including nursery stock, sod, fruits, vegetables, flowers, forages, cover crops, grains, and Christmas trees. Agricultural activity also includes grazing.

Bank Application Form – a wetland bank application form available from the Minnesota Board of Water and Soil Resources (BWSR).

Best management practices (BMPs) – measures taken to minimize the negative effects on the environment. BMP guidance is documented in Protecting Water Quality in Urban Areas (MPCA, 2000), Metropolitan Council Urban Small Sites Best Management Practices Guidebook (Metropolitan Council & Barr Engineering Company, 2001) and Minnesota Stormwater Manual (MPCA, 2005).

Blow counts – the number of blows per foot of a standard penetration resistance test, as described in American Society for Testing of Materials (ASTM) D1586.

Board of Managers or Managers – the Board of Managers of the Valley Branch Watershed District.

Bridge -- the portion of a road, highway, utility, or associated structure that crosses the bed or bank of waters.

BWSR – Minnesota Board of Water and Soil Resources.

Closed Loop Geothermal Systems – a system that circulates a fluid for heat-transfer through pipes or coils buried beneath the land surface and does not discharge the fluid after circulating the fluid through the pipes or coils.

Complete Permit Application – a complete and signed VBWD permit application form; the VBWD permit fee; a Runoff Water Management Plan showing the features and information required by the Watershed Management Plan and these Rules; computations, agreements and documentation required by these Rules; a wetland delineation report or documentation prepared by a wetland scientist indicating there is no wetland on the site; all necessary wetland forms and information; and an erosion control plan.

CWPA – Combined Wetland Permit Application

Criteria – specific details, methods and specifications that apply to all permits and reviews and that guide implementation of the VBWD's goals and policies.

Day or Days – working days when used in a time period of 15 days or less and calendar days when used in a time period greater than 15 days. The day of the event shall not be used in counting any time period.

Development - any proposal to subdivide land, any land disturbing activity, redevelopment affecting land, or creation of impervious surface including, but not limited to, road construction or reconstruction or improvement and construction or reconstruction of stormwater conveyance systems.

Developed Site – see Ultimate Development.

Drainage System – those features of the watershed such as lakes, ponds, streams, and waterways which contain and convey waters of the VBWD.

Drainageway or waterway – any natural or artificial channel which provides a course for water flowing either continuously or intermittently.

DNR – Minnesota Department of Natural Resources.

Excavation – the displacement or removal of soil or other material.

Existing Conditions – current conditions of the site.

Feasible – technically achievable at a cost, in the VBWD's determination, not substantially disproportionate to the stormwater management benefit to be gained.

Floodplain – the area adjoining a watercourse, or natural or constructed water basin, including the area around lakes, wetlands, stormwater ponds, lowlands, and intermittent and perennial streams that is inundated by the 100-year 24-hour rainfall event, the 10-day 100-year snowmelt event, or as calculated using the VBWD's simplified method for landlocked basins. See Rule 5.

Flowage Easement – an easement held in public ownership to reserve areas along waterways and around storage sites and around or along other parts of the drainage systems for the passage or retention of waters, construction of drainage improvements, and maintenance.

Fully Reconstructed Impervious Surface – areas where impervious surfaces have been removed down to the underlying soils. Activities such as structure renovation, mill and overlay projects, and pavement rehabilitation projects that do not alter underlying soil material beneath the structure, pavement, or activity are not considered fully reconstructed impervious surfaces. In addition, other maintenance activities such as catch basin and pipe replacements shall not be considered fully reconstructed impervious surfaces. Reusing an existing building foundation and re-roofing of an existing building are not considered fully reconstructed.

Hydrologic Soil Group – a term used in soil surveys that refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of bare soil to permit infiltration. The slope and the kind of plant cover are not considered, but are separate factors used in predicting runoff. Soils are assigned to four groups (Groups A, B, C, and D). Group A soils have a high infiltration rate when thoroughly wet and have a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. Group D soils, at the other extreme, have a very slow

infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained. See the Soil Survey of Washington and Ramsey Counties.

Impervious surface – a surface that has been compacted or covered with a layer of non-porous material (including buildings/structures), or is likely to become compacted from expected use, so that it is highly resistant to infiltration by water. Compacted aggregate roads and road shoulders are impervious surfaces.

Kelle's Coulee Watershed – all land that ultimately drains to Kelle's Coulee (sometimes called Kelle's Creek); including areas that are typically landlocked, but would overflow to Kelle's Coulee.

Lake Edith Watershed – all land that ultimately drains to Lake Edith, including areas that are typically landlocked, but would overflow to Lake Edith.

LGU – Local Government Unit

Local Watershed Management Plan – a comprehensive local water management plan pursuant to Minnesota Statutes, sections 103B.235.

Lot – a parcel of land designated by plat, metes and bounds, registered land survey, auditors plot, or other accepted means and separated from other parcels or portions by the description for the purpose of sale, lease or separation.

Lot Line – property line bounding a lot, except that where any portion of a lot extends into a public right-of-way or a proposed public right-of-way, the line of the public right-of-way shall be the lot line.

Minimum Building Elevation – the elevation of the lowest floor of the building.

MNRAM 3.0 – Minnesota Routine Assessment Method for Evaluating Wetland Functions, Version 3.0 (MNRAM 3.0) or updated versions.

MPCA – Minnesota Pollution Control Agency.

Municipality – any city or township wholly or partly within the Valley Branch Watershed District.

Normal Water Elevation – the long-term average water level.

Notice of Decision – Notice of Wetland Conservation Act decision, a completed form provided by BWSR or similar.

NPDES – National Pollutant Discharge Elimination System, a federal stormwater regulation program administered by the MPCA.

NPDES Construction Stormwater Permit – a permit program administered by the MPCA (incorporates by reference Minnesota Rules 7090.0060), which is officially called General Permit Authorization To Discharge Storm Water Associated With Construction Activity Under The National Pollutant Discharge Elimination System/State Disposal System Permit Program.

Open Loop Geothermal System – a system that circulates a fluid for heat-transfer through pipes or coils buried beneath the land surface and discharges the fluid, often over land or to a lake, wetland, ditch, or stream, after circulating the fluid through the pipes or coils.

Ordinary High Water level (OHW) – an elevation associated with a water body determined by the DNR, and used to determine DNR jurisdiction. In general, it is the elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape. The ordinary high water level is commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the OHW is typically the elevation of the top of bank of the channel. The OHW does not correlate to a 100-year, 50-year, 10-year, or any other flood level.

Parcel – any area of land capable of being described with such definiteness that its location and boundaries may be established.

Person – an individual, firm, partnership, association, corporation, limited liability company, municipal corporation, city, village, county, town, school district, state agency, or other political subdivision of the State of Minnesota.

Plan – VBWD's 2005-2015 *Watershed Management Plan* (Plan) or as amended, revised, updated, replaced, or superseded.

Plats – maps of a subdivision showing the location and boundaries of individual parcels of land subdivided into lots, with streets, easements, etc., drawn to a scale.

Proposed Conditions – see Ultimate Conditions.

Public health, safety, and welfare – extends to and includes any act or thing tending to improve or benefit or in any way affect the general public either as a whole or as to a particular community or part thereof. This definition is to be construed liberally to give meaning and effect to the goals and purposes of the Valley Branch Watershed District and also statutes and ordinances relating to floodplain management and shoreland use.

Rate of Runoff – the amount of runoff per unit of time for a given storm event, often expressed as cubic feet per second (cfs).

Reconstruction – the rebuilding, repair or alteration of a structure, surface, or facility.

Rules – the Rules and Regulations of the Valley Branch Watershed District.

Runoff – the amount of excess precipitation or snowmelt that is not permanently stored in depressional areas or infiltrated into the soil.

SCS – Soil Conservation Service, now called the Natural Resource Conservation Service (NRCS).

SDS – State Disposal System.

Sequencing – the process of demonstrating that a proposed wetland activity will comply with the principles of the Wetland Conservation Act. The process is called sequencing because there is a specific order of priorities in the Wetland Conservation Act. See Minnesota Rules 8420.0520.

Standards – a preferred or desired level of quantity, quality, or value.

Storage site – an area which is reserved for holding water.

Stream – perennial (streams that flow throughout the year, such as portions of Valley Creek) and intermittent streams (streams that flow during/after a snowmelt or rain event). Longer intermittent streams are identified in Section 4.3.5 of the 2005-2015 VBWD *Watershed Management Plan*.

Structure – anything that is constructed or placed on the ground and that is intended to remain for longer than a brief, temporary period of time.

Subdivision, subdivide – the separation of an area, parcel, or tract of land under single ownership into two or more parcels, tracts, lots.

Surface Water Drainage System – those natural or artificial features of the watershed such as lakes, ponds, wetlands, streams, waterways, and storage sites which contain and convey and/or manage waters of the VBWD.

Swede Hill Creek Watershed – all land that ultimately drains to the St. Croix River, including areas that are typically landlocked, and is within the City of Afton and Valley Branch Watershed District that is not within the Valley Creek, Lake Edith, or Kelle's Coulee watersheds.

TEP – Technical Evaluation Panel.

Ultimate Development – the level of development as proposed in a permit application and/or the future development as proposed in a city, township, or county comprehensive land use plan.

Valley Creek Watershed – all land that ultimately drains to Valley Creek, including areas that are typically landlocked, but would overflow to Valley Creek.

VBWD – Valley Branch Watershed District

Vegetative Buffers - zones of undisturbed vegetation, preferably native vegetation, adjacent to lakes, streams, and wetlands.

Volume of runoff – the amount of stormwater runoff in cubic units, often noted as acre-feet.

Watercourse - a channel that has definable beds and banks capable of conducting confined runoff from adjacent land.

Waters – a watercourse or a natural or constructed water basin, including the area around lakes, wetlands, stormwater ponds, lowlands, and intermittent and perennial streams

Watershed – an area bounded peripherally by a drainage divide, which collects precipitation and contributes runoff to a particular drainage system.

Watershed Management Plan (Plan) – the VBWD's 2005-2015 *Watershed Management Plan* or as amended, revised, updated, replaced or superseded.

WCA – Wetland Conservation Act.

WCA Rules – Minnesota Board of Water and Soil Resources (BWSR) Minnesota Rules Chapter 8420, as amended.

Wetland – any area identified as a wetland under Minnesota Statutes section 103G.005, subdivision 19.

Wetland Conservation Act – The Minnesota Wetland Conservation Act of 1991, (Minnesota Laws 1991, chapter 354, and subsequent amendments).

Wetland Functions – a process or series of processes that take place within a wetland. These include the storage of water, transformation of nutrients, growth of living matter, and diversity of wetland plants, and they have value for the wetland itself, for surrounding ecosystems, and for people. Functions are typically grouped broadly as habitat, hydrologic, or water quality.

Wetland Impact – a measurable or predictable change to the wetland's size, quality, or biological diversity.

Wetland Replacement Plan – A plan conforming to Minnesota Rules 8420 for replacing wetland values where avoidance of activity is not feasible and prudent.

Wetland Values - the benefits wetland functions provide to people.

Required Submittals and Exhibits

The VBWD requires submittals for all projects within the VBWD that require a VBWD permit. The submittals must accompany the permit application and must show how the project conforms to the requirements in these Rules and Regulations and the VBWD Watershed Management Plan. **Electronic submittal of all documents and models is strongly encouraged.**

The following submittals and exhibits must be submitted for all projects within the VBWD that require a VBWD permit:

1. **A completed and signed permit application form.**
2. **Evidence of ownership for the project site.**
3. **The required permit application fee (see Rule 11).**
4. **Grading Plan/Mapping Exhibits:**

   Electronic copies of the plans should be submitted. If electronic copies are not submitted, one 11-inch by 17-inch copy (and two full-sized copies if originals are larger than 11 inches by 17 inches) of the plans shall be submitted. The plans shall be prepared by a registered professional engineer and shall include the following:

   A. Property lines and delineation of lands under ownership of the applicant.

   B. Delineation of the subwatersheds contributing runoff from off-site, proposed and existing on-site subwatersheds, and flow directions/patterns.

   C. Location, alignment, and elevation of proposed and existing stormwater facilities.

   D. Delineation of existing on-site wetlands, shoreland and/or floodplain areas (including any buffers).

   E. Existing and proposed normal water elevations and the critical (the highest) water level produced from the 100-year 24-hour storms, the 100-year 10-day snowmelt event, or the VBWD simplified method for landlocked basins or an approved alternative for all on-site wetlands, ponds, depressions, lakes, streams and creeks (see Rule 5).

   F. Ordinary High Water (OHW) elevations and datum, as determined by the DNR (if applicable).

   G. Existing and proposed site contour elevations related to NAVD 1988 datum (preferred) or NGVD, 1929. Datum must be noted on exhibits.

   H. Drainage easements covering land adjacent to ponding areas, wetlands, and waterways up to their 100-year flood levels and covering all ditches and storm

sewers. Access easements to these drainage easements and to other stormwater management facilities shall also be shown.

I. Minimum building elevation for each lot.

J. Identification of downstream water body.

5. Hydrologic/Hydraulic Design Exhibits:

Electronic files of the following shall be submitted. If an electronic copy is not submitted, one paper copy shall be submitted. The calculations shall be prepared by a registered professional engineer.

A. All hydrologic and hydraulic computations completed to design the proposed stormwater management facilities shall be submitted. Model summaries must be submitted. The summaries shall include a map that corresponds to the drainage areas in the model and all other information used to develop the model.

B. A table (or tables) must be submitted showing the following:

i. A listing of all points where runoff leaves the site and the existing and proposed stormwater runoff rates and volumes.

ii. A listing of the normal water levels under existing and proposed conditions and the water levels produced from the storm and runoff events listed above for all on-site wetlands, ponds, depressions, lakes, streams, and creeks.

C. A completed VBWD stormwater volume reduction checklist (see Rule 2 and Appendix A).

6. Erosion Control and Sedimentation Prevention Exhibits (see Rule 3):

A. Electronic copies shall be submitted. If electronic copies cannot be submitted, one 11-inch by 17-inch copy (and two full-sized plans if originals are larger than 11-inches by 17-inches) which show how waterborne sediment will be prevented from leaving the site during and after construction to prevent sedimentation of downstream water bodies. The plans shall include a construction sequencing schedule.

B. A copy of the Stormwater Pollution Prevention Plan (SWPPP), prepared by a qualified individual, which conforms to the MPCA's NPDES Construction Stormwater Permit requirements. The NPDES permit requirements cover both temporary and permanent erosion prevention and sediment control measures, and apply to all construction projects that disturb one or more acres of land. The SWPPP must conform to the special requirements for "Special Waters" (Valley Creek and the St. Croix River), when applicable. The SWPPP shall also show how erosion will be prevented during construction on individual building sites. Any applicable local standards shall be incorporated into the plan.

7. **Construction plans for all proposed stormwater management facilities.** Construction specifications must be provided upon request.

8. **A maintenance agreement in the format of Appendix B,** as revised and updated by the VBWD Attorney.

9. **Four copies of the Wetland Delineation Report**, which also must include a summary of the MnRAM evaluation (Minnesota Routine Assessment Method for Evaluating Wetland Functions, Version 3.0 or updated versions), and classification determination according to VBWD's wetland management classification system (see Rule 4).

10. **Five copies of Part 1 of the Combined Wetland Permit Application (CWPA)** for all projects proposing to alter wetlands, which may not require wetland replacement (see Rule 4).

11. **Five copies of the Wetland Replacement Plan, including Parts 1 and 2 of the CWPA**, for all projects requiring wetland replacement (see Rule 4).

12. **Draft Declaration of Covenants** that lists the VBWD-required minimum floor elevations.

13. **Other exhibits required by or to show conformance to these Rules and Regulations.**

Permit Application Process

1. The VBWD Engineer must receive from the applicant a complete permit application, all necessary supporting documents, and the permit application fee 14 calendar days prior to a meeting at which application is to be considered. Supporting documentation must include the deed of ownership for the project site. If the permit applicant does not yet own the property, a preliminary VBWD permit can issued, but will not be effective until the VBWD receives the proof that the permit applicant owns the property.

2. The VBWD Engineer will review each permit request with respect to VBWD policies and criteria.

3. The VBWD Engineer will notify the applicant concerning

    A. Applicable VBWD criteria and policies.

    B. Additional required information where necessary with copies to the appropriate community and other concerned agencies

4. The VBWD Engineer will place the development proposal on the agenda when all the required information is received and all VBWD policies are met or a variance is requested and supporting written documentation is submitted. The Engineer will then submit a written report to the Managers at least two (2) days prior to the Managers meeting.

5. The issuance or denial of a permit shall be based on the policies contained in the Watershed Management Plan and these Rules and Regulations.

6. The Managers will act on a complete permit application within 60 days of receipt or as required by the Rules of the Wetland Conservation Act.

7. The granting of a VBWD permit in no way purports to permit acts which may be prohibited by other governmental agencies.

8. The required surety (see Rule 14) must be submitted prior to the commencement of any permitted activities.

Enforcement and Severability

1. The VBWD may exercise all powers conferred upon it by Minnesota Statutes, Chapter 103, in enforcing these Rules and Regulations.

2. If for any reason a section or subdivision of these Rules and Regulations should be held invalid, such decision shall not affect the validity of the remaining Rules and Regulations.

3. These Rules and Regulations shall conform to Minnesota law and if inconsistent therewith, the latter shall govern and these Rules and Regulations are amended accordingly.

Appellate Procedure and Review

1. Any person aggrieved by enforcement of these Rules and Regulations or by any Order of the VBWD may appeal there from in accordance with the appellate procedure and review as provided in Minnesota Statutes Chapter 103D.

Amendment Procedure

1. Any person may petition the Managers for the purpose of amending or changing these Rules and Regulations.

2. The Managers may initiate changes or amendments to these Rules and Regulations.

3. All changes and amendments to these Rules and Regulations, whether initiated by the Managers or by any other person, will require a majority vote of the Managers.

Permit Close-Out

1. The Managers will certify completion of a permitted project or element of the project and authorize the release of any required security upon inspection and submittal of information verifying completion of that project or an element of that project in accordance with the approved plans and conditions of the permit. For consideration of permit close-out or a reduction in the security amount, the permit holder must at least 14 calendar days prior to a meeting at which completion is to be considered, provide proof that all required documents have been recorded (including but not limited to easements) and must provide as-built drawings. For consideration of completion of an element of a project (partial completion), the permit holder must provide documented proof that all components of the completed project are built according to the approved plan, which may include recording of documents (including but not limited to easements) and as-built drawings.

The as-built drawings must include:

A. the surveyed bottom elevations, water levels, and general topography of all basins;

B. the size, type, and surveyed invert elevations of all pond outlets;

C. the surveyed elevations of all pond, street, and other emergency overflows;

D. other important features to show that the project was constructed as approved by the Managers and protects the public health, welfare, and safety.

E. the surveyed minimum floor elevations and low building opening elevations of constructed structures;

F. the required minimum floor elevations for all lots and un-built structures; and

G. the locations and elevations of septic systems, if they have been constructed.

2. All surveys must be certified by a Minnesota registered land surveyor.

3. The permit holder must provide documentation that constructed infiltration facilities perform as designed. Methods to document infiltration performance must be approved by the VBWD Engineer prior to documentation. Available options for documentation include:

A. Time and date-stamped photographs showing that the infiltration basin drains dry within 48 hours (or 24 hours, if required) after a natural precipitation event approximately equivalent to the design storm.

B. Time and date-stamped photographs showing that the infiltration basin drains dry within 48 hours (or 24 hours, if required) after the basin is filled with water from municipal water supply, water trucks, or stormwater ponds.

C. Double-ring infiltrometer tests or other field tests approved by the VBWD Engineer.

4. The Managers will not release the permit holder's remaining fee and performance bond or other security until all of information is submitted, all temporary erosion prevention and sediment controls (such as silt fence) are removed, and stormwater ponds and pipes are free of sediment. No activity will be certified as complete if there are any unpaid fees or other outstanding permit violations.

Rule 2: Stormwater Management

Policies

1. To carry out the responsibility of managing the VBWD's water resources and to implement the goals and policies of the VBWD Plan, the Managers must be informed of all water and wastewater discharges within the VBWD. This includes stormwater runoff, municipal and industrial wastewater discharges, lake augmentation, and any discharge that requires a National Pollutant Discharge Elimination Program (NPDES) permit.

2. All discharges and related improvements must conform to the applicable requirements of State and Federal agencies including, but not limited to, Minnesota Rules Chapter 8410, MPCA stormwater permit requirements, and DNR permit requirements.

3. All stormwater discharges must be in general conformance with the VBWD Plan and local watershed management plans.

4. All discharges and related improvements, including those from municipal or industrial water or wastewater or utilities or soil or groundwater remedial actions, shall not unreasonably raise water levels or degrade the water quality of the waters of the VBWD.

5. Discharges from open-loop and closed-loop geothermal systems to the land or surface waters of VBWD are prohibited. Therefore, open-loop geothermal systems are prohibited.

6. **Rate Control:** Stormwater and snowmelt runoff rates will be managed so that future peak rates of runoff crossing community boundaries and/or leaving a development are below or equal to existing rates.

7. **Volume Control:** Stormwater volume will be controlled so that surface water and groundwater quantity and quality are protected.

8. **Water Quality:**

   A. All stormwater runoff will be treated at the time of development.

   B. Developers are encouraged to try new and innovative stormwater management techniques.

   C. The VBWD will work with local government units to adopt/revise ordinances to allow for runoff pollution prevention methods (e.g., narrower streets, smaller parking lots).

   D. Projects and development plans will be reviewed to evaluate compliance with VBWD standards.

   E. Other public agencies will be required to conform to VBWD stormwater quality requirements.

F. Local watershed management plans will be reviewed for compliance with the VBWD Plan.

9. Submittals will be required for VBWD-permitted projects that must show how the project will meet VBWD requirements for stormwater quality treatment, stormwater rate and volume management, and erosion control.

Standards

1. Any permitted activity shall meet the management policies, standards, and criteria set forth in the VBWD Plan.

2. The permit applicant must comply with the requirements of the NPDES Construction Stormwater Permit. For trout streams (projects within the Lake Edith and Valley Creek watersheds), these requirements include temperature control measures ranging from minimizing impervious surfaces (most preferred) to special pond designs.

3. The permit applicant shall complete analyses of stormwater runoff volumes and rates, and flood levels for existing and proposed conditions. Analyses must include the 2-year, 10-year, and 100-year 24-hour storms with VBWD-approved time distribution; the 100-year 10-day snowmelt event; and the VBWD simplified method for landlocked basins (or an approved alternative). Section 4.5 of the VBWD Plan and Rule 5 provide more information about the VBWD simplified method and floodplain management requirements for permit review in general.

4. The following computer programs will be accepted: HydroCAD, XP-SWMM, MIDS Calculator, and TR 20. Other programs may be accepted, but the permit applicant must inquire prior to submitting the computations. Reservoir routing procedures and critical duration runoff events shall be used for design of detention basins and outlets.

5. The peak rate of stormwater runoff from the developed site shall not exceed the existing peak rate of runoff for all critical duration events, up to and including the 100-year return frequency storm event for all points where discharges leave a site during all phases of development. Design criteria shall be the 2-, 10-, and 100-year 24-hour storms with respective 2.8, 4.2, and 7.3-inch rainfall depths with VBWD-approved time distribution and the 7.2-inch 100-year 10-day snowmelt event. The runoff curve number for existing agriculture areas shall be less than or equal to the developed condition curve number. If storm sewer systems are designed for an event less than a 100-year event, the plans and computer modeling analyses must include secondary overflows for events exceeding the storm sewer systems level-of-service up through the critical 100-year event.

6. The stormwater runoff volume must be controlled. The VBWD design standards for controlling stormwater runoff volumes are the following:

A. **New, Nonlinear Developments:** For new, nonlinear developments that create 6,000 square feet or more of new impervious surface on sites without restrictions, stormwater runoff volumes will be controlled and the post-construction runoff volume shall be retained on site for 1.1 inches of runoff from impervious

surfaces. In other words, the volume retained shall be 1.1 inches times the impervious surface without any abstractions/losses.

B. **Reconstruction/Redevelopment Projects:** Nonlinear redevelopment projects on site without restrictions that create 6,000 square feet or more of new and/or fully reconstructed impervious surfaces shall capture and retain on site 1.1 inches of runoff from the new and/or fully reconstructed impervious surfaces.

C. **Linear Projects:** For linear projects (roadways, sidewalks, and trails) without restrictions and not part of another development that create 6,000 square feet or more of new and/or fully reconstructed impervious surfaces, shall capture and retain the larger of the following:

- 0.55 inches of runoff from the new and fully reconstructed impervious surfaces
- 1.1 inches of runoff from the net increase in impervious area

D. **Sites with Restrictions:** If a site has restrictions where infiltration is not feasible or advised, such as karst topography, very fast or very slow infiltrating soils, shallow bedrock, a shallow confining layer/rough terrain, shallow groundwater, Drinking Water Management Supply Areas, and/or potential stormwater hotspots, as determined by the applicant and agreed upon by the VBWD or as determined by the VBWD, the applicant must follow these flexible treatment options, as summarized in the design sequence flow chart in Appendix C.

i. Project must first attempt to design the site to achieve retention of at least 0.55 inches of runoff from the proposed impervious surfaces and remove 75% of the annual total phosphorus load leaving all points on the site. Options considered and presented shall examine the merits of relocating project elements to address varying soil conditions and other constraints across the site.

ii. If the project cannot achieve the standards listed in Standard 6Di above, the project shall achieve volume reduction to the maximum extent practicable and remove 75% of the annual total phosphorus load leaving all points on the site. Options considered and presented shall examine the merits of relocating project elements to address varying soil conditions and other constraints across the site.

iii. If the project cannot achieve the standards listed in Standard 6Dii above, the project shall achieve volume reduction to the maximum extent practicable and remove 60% of the annual total phosphorus load leaving all points on the site. Options considered and presented shall examine the merits of relocating project elements to address varying soil conditions and other constraints across the site.

iv. Off-site mitigation (including banking or cash or treatment on another project) will be considered by the VBWD on a case-by-case basis. In all cases, the receiving water shall be protected.

E. **Additional Stormwater Volume Requirements and Design Standards**

i. The permit applicant must complete the VBWD's stormwater volume checklist (see Appendix A).

ii. Sites within the Valley Creek and Lake Edith Watersheds ultimately drain to a trout stream, and must comply with the Minnesota Pollution Control Agency (MPCA) NPDES Construction Stormwater Permit standards.

iii. Infiltration facilities must drain down within 48 hours, as required by the MPCA NPDES Construction Stormwater Permit. For sites within the Valley Creek, Lake Edith, Kelle's Coulee, and Swede Hill Creek watersheds, infiltration facilities must drain down within 24 hours, as required by the MPCA Construction Stormwater Permit. For stormwater volume control management facilities above ground with vegetation (e.g., bioretention basins), the period of inundation shall be calculated using the maximum water depth below the surface discharge elevation and the soil infiltration rate. The maximum water depth for stormwater volume control management facilities above ground with vegetation (e.g., bioretention basins) is 1.5 feet.

iv. Infiltration facilities should be located in permeable soils and a minimum 3-foot distance is required from the bottom of the practice to the seasonally high water table, bedrock or other impeding layer per the MPCA NPDES Construction Stormwater Permit.

v. Infiltration facilities must conform to the minimum setbacks required by the Minnesota Department of Health, as summarized below:

MN Department of Health Minimum Setbacks for Infiltration Facilities[2]

Setback From	Minimum Distance (feet)
Property Line	10
Building Foundation (with slopes directed away from building)	10
Private Well and Public Water Well	50
Septic System Tank/Leach Field	35

[2] Pages 437 and 440 of Minnesota Pollution Control Agency's The Minnesota Stormwater Manual, November 2005

vi. For an infiltration facility with a tributary area of two acres and less, and with less than 0.7 acres of impervious surfaces, at least 50% of the in-flow volume from impervious surfaces must be pre-treated prior to entering the feature. Pre-treatment can consist of vegetative swales, filter strips, sediment forebays/traps, grit chambers or other measures.

vii. For an infiltration facility with a tributary area of greater than 2 acres or 0.7 acres or more of impervious surfaces, 100% of the in-flow volume from impervious surfaces must be pre-treated prior to entering the feature. Pre-treatment for these facilities must be designed to remove at least 25% of the inflow sediment loads.

viii. For proposed infiltration facilities with drainage areas of two acres or more or with 0.7 acres or more of impervious surfaces, a soil boring with blow counts will be required. The soil boring will be required to go to a depth of at least five feet below the proposed bottom of the infiltration facility. If fractured bedrock is suspected, the soil boring should go to a depth of at least ten feet below the proposed bottom of the infiltration facility. The soils will be classified using the Unified Soil Classification system. The least permeable soils horizon will dictate the infiltration rate.

ix. The permit applicants are encouraged to make detailed analyses and accurately determine the infiltration rates of the proposed infiltration facility. However, in the absence of a detailed analysis, the VBWD Engineer's recommendations and requirements shall be based upon the following rates:

VBWD Soil Infiltration Rates

Proposed Infiltration Facility with Drainage Area Less than 2 Acres And Less than 0.7 Acres of Impervious Surfaces	
Hydrologic Soil Group Based on Soil Survey	**Infiltration Rate (inches/hour)**
A	0.8
B	0.3
C	0.2
D	Infiltration not feasible or unlikely to be successful without soil corrections. See Standard 6D, Sites with Restrictions.
Proposed Infiltration Facility with Drainage Area 2 Acres or More Or 0.7 Acres or More of Impervious Surfaces	
Unified Soil Classification	**Infiltration Rate (inches/hour)**
GW, GP, SW	1.6
SP	0.8
GM[1], SM[1]	0.5
All Others	Infiltration not feasible or unlikely to be successful without soil corrections. See Standard 6D, Sites with Restrictions.

[1] The VBWD highly recommends that the GM and SM soils be collected and analyzed by a laboratory to determine the appropriate infiltration rate.

7. An infiltration facility must be designed so that volumes in excess of the design volume are safely conveyed into the downstream stormwater system.

8. To prevent soil compaction, the proposed infiltration facility must be staked off and marked during construction to prevent heavy equipment and traffic from traveling over it. If infiltration facilities are in-place during construction activities, sediment and runoff must be kept away the facility, using practices such as diversion berms and vegetating around the facility's perimeter. Infiltration facilities must not be excavated to final grade until the contributing drainage area has been constructed and fully stabilized. The final phase of excavation should remove all accumulated sediment and be done by light tracked equipment to avoid compaction of the basin floor. To provide a well-aerated, highly porous surface, the soils of the basin floor should be loosened to a depth of at least 3 feet prior to planting. For sites where blow counts per foot exceed 10, the soils of the basin floor should be loosened to depth of at least 5 feet prior to planting. The upper 10 inches of soil should also be tilled prior to planting.

9. As specified in the close-out process in Rule 1, prior to the release of any remaining fee or security, the permit holder must provide documentation that constructed infiltration facilities perform as designed.

10. The determination of whether a design will result in an erosion problem shall be based on generally accepted engineering design manuals or practices.

11. Best Management Practices shall meet the standards established in the VBWD Plan for runoff water quality management and erosion control plans.

12. A maintenance agreement in the general format of Appendix B as revised and updated by the VBWD (attorney) is required prior to issuance of a VBWD permit, unless the VBWD has a memorandum of understanding for the city or township in which the site lies. For sites within Minnesota Department of Transportation right-of-way, no maintenance agreement is required.

13. Land used for stormwater management facilities shall be preserved by dedication and/or perpetual easement to the Valley Branch Watershed District. These easements shall cover those portions of the property which are adjacent to the facility and which lie below the 100-year flood elevation. Adequate access must be provided to all stormwater management facilities for inspection, maintenance, and landscaping upkeep, including appropriate equipment and vehicles. For sites within a city or township in which the VBWD has a memorandum of understanding, the easement shall be granted to that city or township. For sites within public right-of-way, no easement is required.

Rule 3: Erosion and Sedimentation Control

Policies

1. To minimize the erosion which can occur as a result of land alteration, the Managers require that all projects which may affect the waters of the VBWD implement temporary and permanent erosion control measures. The permit applicant shall be responsible for removal of all temporary measures upon completion of the project.

2. A permit will not be required for usual agricultural practices, but the Managers will encourage good conservation measures.

3. If an erosion problem develops, the Managers will require action to correct the problem and prevent recurrence.

4. Submittals will be required for VBWD-permitted projects that must show how the project will meet the VBWD requirements for preventing sediment from leaving a site and for controlling erosion.

Standards

1. The Metropolitan Council's Minnesota Small Sites Best Management Practices Manual shall serve as the minimum guidelines for erosion control measures.

2. All activities shall be in compliance with the NPDES Construction Stormwater Permit as administered by the MPCA. (See Appendix E.)

3. If grading activities are proposed upstream of wetlands, appropriate sediment-control practices are required. All dikes, ditch checks, sediment ponds and other features shall be designed in accordance with the erosion control plan requirements of the VBWD's Plan.

4. Plans shall include commonly accepted restoration methods.

5. Any disturbed areas shall be seeded and mulched within 7 days after the area is no longer actively being worked. All exposed soil areas with a slope of three feet horizontal to one foot vertical (3H:1V) or steeper must have temporary erosion protection or permanent cover within 3 days after the area is no longer actively being worked. The Managers may, if requested and conditions warrant, allow more time before seeding and mulching is required.

6. All erosion and sediment control measures shall be installed prior to alteration and shall be maintained until turf is established. The VBWD Engineer and/or VBWD Inspector shall be notified three days prior to commencement of grading to schedule an inspection of the project's erosion controls. The erosion controls must be in place and properly installed before grading will be permitted.

7. All construction-related sediment shall be removed from ponding areas upon completion of construction.

Rule 4: Wetland Management and Vegetative Buffers

Policies

1. To protect the quantity, quality, and biological diversity of the wetlands within the VBWD, all projects below the 100-year flood level of a wetland will be regulated by the VBWD Managers.

2. The VBWD has adopted the Minnesota Wetland Conservation Act of 1991, (Minnesota Laws 1991 Chapter 354, codified as Minnesota Statute Sections 84 and 103, as amended), and the accompanying rules of the BWSR (Minnesota Rules Chapter 8420, as amended), herein referred to as the WCA and the WCA Rules, respectively.

3. The VBWD will continue as the Local Government Unit (LGU) administering the WCA throughout the VBWD, as long as the cities and townships in VBWD continue to designate the VBWD as the LGU. The LGU responsible for administering the WCA on state land is the agency with responsibility for the land. For all projects requiring a VBWD permit, the VBWD will continue to administer the wetlands management provisions of its rules and regulations, regardless of LGU status for the WCA. In addition, in the event that the WCA should ever be repealed, the VBWD will incorporate the WCA requirements into the VBWD rules and regulations.

4. The VBWD will continue to accept the DNR's waived permit jurisdiction for Public Waters Work Permit program projects on a case-by-case basis. In these cases, a DNR representative will be included on the Technical Evaluation Panel (TEP).

5. Upland vegetative buffers will be required adjacent to lakes, streams, and wetlands because they reduce the amount of phosphorus from runoff, prevent shoreline erosion, discourage waterfowl nesting/feeding, and provide additional wildlife habitat.

Standards and Procedures

1. The WCA, as amended, and its implementing rules as set forth in Minnesota Rules Chapter 8420, as amended, are incorporated into this rule and shall govern in all cases where the VBWD is the LGU responsible for administering the WCA with any exceptions and additions defined elsewhere in these Rules.

2. Any wetland alteration shall not reduce the existing storage volume in the immediate watershed. Storage volume will be determined as stated elsewhere in these Rules. Wetland alterations shall meet all other requirements of these Rules.

3. A pre-permit application meeting between the permit applicant and the VBWD or TEP is strongly encouraged for all projects involving potential wetland impacts and wetland banks.

4. All wetlands within the property of the permitted project shall:

    A. Have boundaries and types determined by methodologies set forth in Minnesota Rules Chapter 8420.0405, as amended,

    B. Be evaluated with the Minnesota Routine Assessment Method for Evaluating Wetland Functions, Version 3.4 (MNRAM 3.4) or updated versions, and

5. Be classified according to VBWD's wetland management classification system (see Appendix D). Based on the wetland's management classification, proposals must conform to the wetland management standards and guidelines shown in Appendix D, Table D-2.In addition to the requirements of the WCA for replacement wetlands, the replacement wetlands, including the purchase of wetland bank credits, shall be located within the VBWD, unless the Managers find the need for exception.

6. The VBWD may permit the excavation of some wetlands. However, no excavation will be allowed in wetlands classified as Type 7 or Type 8 wetlands as defined by the Circular 39 classification system developed by the U.S. Fish and Wildlife Service. Excavations in Type 3, 4, and 5 wetlands are regulated activities under the WCA and may require replacement. The VBWD may permit excavation in existing wetlands when the following apply:

    A. The applicant can show that the activity will not affect all property owners contiguous to the wetland.

    B. The excavated spoil material will not be placed within a wetland.

    C. The wetland is a Manage 2 wetland, as classified in Appendix D.

    D. No more than 50 percent of a Type 1, 2, or 6 wetlands is excavated, unless it is an approved action as stated in Minnesota Rules 8420.0526 and will not result in a conversion of wetland to upland or deep water habitat (greater than 2.0 meters).

    Considerations will be given to allow excavations of existing wetland areas so that adjacent replacement wetlands are hydrologically and ecologically connected to existing wetlands or if the proposed excavation is certain to result in greater functions and values as determined by MNRAM 3.4 or an updated version.

7. In addition to the requirements of the WCA for wetland banking applications, two of the three TEP members must meet on the site prior to the LGU decision. The permit applicant is responsible for obtaining all other permit approvals (i.e., U.S. Army Corps of Engineers).

8. The applicant is to provide all copies needed for proper distribution and recording at the time application is made.

9. For all projects which may decrease the quantity, quality, or biological diversity of a wetland, including projects that may qualify for a WCA exemption or No Loss, the applicant shall submit five copies of the Combined Wetland Permit Application (CWPA) and one VBWD permit application form for consideration. Once the CWPA has been

received, the VBWD will follow the completeness review, notification, and review procedures defined in the WCA. The VBWD may determine a CWPA is incomplete when seasonal constraints prevent on-site review and verification of the wetland delineation. The VBWD will review the application based on the policies and standards of the VBWD Plan, the WCA, and these Rules. The permit applicant and any TEP member can request a meeting to further discuss the CWPA at any time between the *Notice of Application* and the *Notice of Decision*. After the TEP has been given opportunity to review and comment on the CWPA, the VBWD will consider the TEP comments and decide if the CWPA conforms to the WCA rules, the VBWD Plan, and these Rules.

10. Prior to the VBWD issuing a permit for the construction of wetland replacement sites, the permit applicant must submit a draft *Declaration of Restrictions and Covenants,* an *Affidavit of Landowner,* and *Consent to Replacement Wetland.* Once the VBWD Attorney has approved the draft *Declaration of Restrictions and Covenants*, which shall include a metes and bounds survey of the wetland replacement area, the *Declaration of Restrictions and Covenants* must be recorded. Proof of recording the *Declaration of Restrictions and Covenants* and *Consent to Replacement Wetland,* along with a signed and notarized *Affidavit of Landowner* must be submitted to the VBWD Attorney prior to impacting a wetland.

11. Decisions made under the WCA may be appealed to the BWSR under WCA Rules part 8420.0905.The applicant shall post a cash surety or letter of credit equivalent to 150 percent of the estimated cost of the replacement wetland, to be determined by the permit applicant and approved by the VBWD Engineer, including: the cost to construct, vegetate, conduct at least five years of effective vegetation management, monitor (consisting of at least three site visits during each growing season for at least five years), and create and publish annual monitoring reports; or the cost of obtaining and finalizing the purchase of suitable wetland banking credits. Additional cash sureties may be required based upon conditions imposed on the applicant by the VBWD.

12. In accordance with the WCA Rules part 8420.0810, replacement wetlands and wetland bank sites will require monitoring, vegetation management, and the submittal of annual reports to the TEP and VBWD by October 1 of each monitoring year for five years after construction certification with possible extensions of up to five years. Monitoring programs and the submittal of annual reports to the TEP are the responsibility of the applicant and are to be performed according to the WCA Rules. If the permit holder fails to submit an annual report to the TEP, VBWD will pursue enforcement action, per WCA or prepare the annual monitoring report at the expense of the permit holder. The VBWD may perform vegetation management under some circumstances, at the expense of the applicant. If at the end of five years, the replacement wetland components meet the approved performance standards, future monitoring will not be required. If the project fails to meet the goals of the approved wetland replacement plan, VBWD will take enforcement actions, per WCA, or conduct wetland replacement at the expense of the permit holder.

13. Upland Vegetative Buffer Strips.

Upland buffer vegetation shall be provided around wetlands, streams, and lakes as discussed in the following paragraphs and Rule 4, Standard 6c. Native, non-invasive vegetation is preferred. Buffer vegetation shall not be cultivated, cropped, pastured, mowed, fertilized, subject to the placement of mulch or yard waste, or otherwise disturbed, except for periodic cutting or burning that promotes the health of the buffer, actions to address disease or invasive species, mowing for purposes of public safety, temporary disturbance for placement or repair of buried utilities, or other actions to maintain or improve buffer quality, each as approved by the VBWD or when implemented pursuant to a written agreement executed with the VBWD. No new structure or impervious surface shall be placed within a buffer. Grading within upland buffers must result in slopes of five feet horizontal to one foot vertical or flatter with eight feet horizontal to one foot vertical buffers encouraged. No fill, debris or other material shall be excavated from or placed within a buffer without VBWD approval.

A. **Wetlands:** A minimum 25-foot vegetative buffer strip immediately adjacent and contiguous to the delineated wetland boundary or the Ordinary High Water level (OHW), whichever is greater in elevation, shall be provided for all permitted activities. Average buffer widths at wetlands shall conform to Appendix D. A mowed access path within the buffer is allowed, but must not exceed a width of 6 feet. Access paths shall not be located where concentrated runoff will flow to the wetland.

B. Streams:

i. **Valley Creek:** A minimum 100-foot vegetative buffer strip measured perpendicular from the edge of water on each side of the creek shall be provided and maintained at all times for all permitted activities adjacent to the perennial portion of Valley Creek. Exceptions from this requirement for areas, such as water crossings, are allowed if the permit applicant fully documents the circumstances and reasons that the buffer encroachment is necessary. A mowed access path within the buffer is allowed, but must not exceed a width of 6 feet. Access paths shall not be located where concentrated runoff will flow to the creek.

ii. **Raleigh Creek & All Intermittent Streams (including the intermittent reaches of Valley Creek):** An average 50-foot wide vegetative buffer strip and a minimum 25-foot wide foot vegetative buffer strip measured perpendicular from and on both sides of the centerline shall be provided and maintained at all times for all permitted activities adjacent to the stream. Exceptions from this requirement for special situations, such as water crossings, are allowed if the permit applicant fully documents the circumstances and reasons that the buffer encroachment is necessary. A mowed access path within the buffer is allowed, but must not exceed a width of 6 feet. Access paths shall not be located where concentrated runoff will flow to the creek.

Drainageways that serve local projects (such as road ditches) and convey runoff to a stormwater management facility prior to draining to a stream or other VBWD water are not considered intermittent streams by the VBWD and are not required to have vegetative buffers.

C. **Lakes:** A minimum 35-foot wide buffer strip measured perpendicular to the OHW extending 35 feet inland shall be provided. A mowed access path and shoreline is allowed, but must not exceed 30% of the landowner's shoreline width or 30 feet, whichever is less. For shorelines less than 20 feet wide, a 6 foot-wide access path is allowed. Access paths shall not be located where concentrated runoff will flow to the lake.

For this rule, lakes are defined as Silver Lake, Long Lake, Lake DeMontreville, Lake Olson, Lake Jane, Lake Elmo, Horseshoe Lake, Lake Edith, and Sunfish Lake. Other non-stormwater pond basins will be considered wetlands and will need to conform to the required vegetative buffers discussed elsewhere in these Rules. (These lakes are the VBWD waters with a "P" designation in the Minnesota Department of Natural Resources' public water inventory. Acorn Lake and Eagle Point Lake were given a "P" designation, but are considered wetlands by the VBWD because of their shallow depths.)

D. **Stormwater Ponds**: A stormwater pond is a pond constructed in an upland area with a permanent pool, the purpose of which is to treat stormwater runoff. A minimum 10-foot wide buffer strip measured perpendicular from the normal water elevation extending 10 feet inland shall be provided.

E. **Exceptions:**

i. For roads and sites with existing homes, if a VBWD permit is needed for an activity, the buffer widths listed in these Rules and Regulations are strongly encouraged, but may not be feasible and practical. The VBWD Managers will review these situations on a case-by-case basis.

ii. For streambank and shoreline stabilization projects, the buffer widths listed are strongly encouraged, but not required.

Rule 5: Floodplain Management

Policies

1. It is in the best interest of the public health, safety, and welfare that the Managers regulate the development and the use of floodplains.

2. Alterations or work within the floodplain or waters of the VBWD will be reviewed to:

   A. control floodplain encroachments

   B. prevent adverse environmental impact

Standards

1. Flood Level Determination

A. Ultimate development of the tributary watershed shall be assumed.

B. Design criteria shall be the 2-, 10-, and 100-year storms. The 100-year 10-day snowmelt event shall also be modeled. See Rule 2, Standard 5.

C. Flood levels shall be either determined or approved by the VBWD Engineer.

D. Many depressions within the VBWD are landlocked. That is, they have no surface water outlet. Because there is no surface outlet, runoff collecting in these depressions is removed only by seepage and evaporation. Under these circumstances, a detailed flood level analysis should include the effects of seepage and evaporation. Analysis of this type can be very complex.

In order to determine appropriate flood levels for these depressions, a simpler method of analysis was devised. With this method, the approximate 100-year flood level is determined using the annual runoff volumes shown in the following table:

VBWD Simplified Method Runoff Volumes for Calculating Flood Levels of Landlocked Depressions

Land Use	100-Year Annual Runoff Volume (inches)	Average Annual Runoff Volume (inches)	Differences; Net 100-Year Annual Volume (inches)
Impervious	32	16	16
Turfed	18	8	10
Water Surface	12	-6	18

For a natural landlocked pond, the average year's runoff volume is assumed to be dissipated by the average seepage rate of the pond. The additional runoff for a wet

year is assumed to be stored in the pond above the normal pond level (the long-term average water level of the pond). If the applicant can demonstrate that seepage will be greater than is assumed by this method, a less conservative flood level may be accepted.

The 100-year flood level is the level at which the depression will store the runoff volume calculated using the above table and the tributary watershed. Storage below the normal water level of the depression shall not be included in the computations.

To use the land within the VBWD to the maximum extent desirable, the communities and developers are encouraged to make detailed analyses and accurately determine 100-year flood levels. However, in the absence of a detailed analysis, the VBWD Engineer's recommendations and requirements shall be based upon flood levels determined using the above approximate method.

2. Minimum Building Elevations

A. Adjacent to all waters of the VBWD, the Managers shall set the minimum building elevation at two feet above the 100-year flood elevation. The minimum building elevation for each lot shall be noted on the grading plan.

B. The VBWD Managers may deviate from their usual minimum building elevation requirement if the applicant provides site-specific data (e.g., soil borings) that show buildings will be protected from flooding.

3. Floodplain Preservation and Uses

A. Floodplains adjacent to existing and future waters and waterways shall be preserved by dedication and/or perpetual easement to the VBWD. These easements shall cover those portions of the property which are adjacent to the water or waterway and which lie below the 100-year flood elevation.

B. Filling and crossing of waters of the VBWD.

i. **Lakes, ponds and storage sites:** Fill volumes shall be limited so that the cumulative effect of all possible filling will not raise the 100-year flood level more than 0.1 foot.

ii. **Waterways:** Fill and other alterations shall be limited so that the cumulative effect of all possible alterations shall not increase the 100-year flood level more than 0.5 foot.

C. The Board of Managers may determine that certain areas of the VBWD are or will be in a flood situation and will not allow any filling until the situation has been corrected.

D. Uses of Floodplain Adjacent to Waters of the VBWD

i. Buildings or other improvements to be located in the floodplain or materials to be stored in the floodplain will be permitted only when:

a. It can be shown that the building or improvements to be located in the floodplain will not be significantly damaged by flooding.

b. It can be shown that the improvements and materials will not unreasonably endanger life or property.

c. It can be shown that the improvements and materials will not unreasonably affect the water resource.

4. Floodplain Alterations

A. Alterations which will unreasonably impact another community will not be permitted. Such alterations may include: The outletting of landlocked ponds to another community and modifying lake outlet elevations.

B. Alterations which will unnecessarily impact the waters of the VBWD will not be permitted.

C. Alterations not in conformance with the VBWD Plan and applicable Minnesota Law will not be permitted.

Rule 6: Illicit Discharge and Connection

Policies

1. The VBWD will regulate the contribution of pollutants to the District's municipal separate storm sewer system (MS4) by any user;

2. The VBWD will prohibit Illicit Connections and Discharges to the District's MS4;

3. The VBWD will carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this Rule;

4. The VBWD will require a District permit for new direct connections, changes to existing hydrology, and other impacts related to the proper function, access, and maintenance to the District's MS4 or easements;

5. The VBWD will not allow new direct connections or other impacts to the District's MS4 if the connection shall cause or exacerbate water conveyance or structural problems in the system, including but not limited to surcharging and flooding.

6. This Rule shall apply to all water entering the storm drain system of VBWD's MS4 generated on any developed and undeveloped lands unless explicitly exempted by VBWD. A permit and stormwater management plan is required under this rule for new direct connections, replacement of existing connections, changes to existing hydrology, or other impacts to the Beltline Interceptor, other components of VBWD's MS4, or its easements.

7. In this Rule, pollutant is defined as anything which caused or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that some may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

Standards

1. **Connection to the VBWD's MS4 System**

   A. New direct connections and replacement of existing connections shall be completed using a method that is approved by the VBWD.

   B. Peak flow rate, the total volume of flow, and the timing of the flow for new connections must be managed to not cause new water conveyance problems or exacerbate existing water conveyance problems.

2. Discharge Prohibitions

A. **Prohibition of Illegal Discharges.** No person shall discharge or cause to be discharged into the municipal storm drain system or watercourses any materials, including but not limited to pollutants that cause or contribute to a violation of applicable water quality standards, other than stormwater.

B. **Prohibition of Illicit Connections.** The construction, use, maintenance or continued existence of illicit connections to the storm drain system without a VBWD permit is prohibited.

i. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

ii. A person is considered to be in violation of this Rule if the person connects a line conveying sewage to the VBWD's MS4, or allows such a connection to continue.

3. Suspension of MS4 Access

A. Suspension due to Illicit Discharges in Emergency Situations. The VBWD may, without prior notice, suspend MS4 discharge access when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to VBWD's MS4 or Waters of the United States. If the violator fails to comply with a suspension order issued in an emergency, VBWD may take such steps as deemed necessary to prevent or minimize damage to VBWD's MS4 or Waters of the United States, or to minimize danger to persons or the environment.

B. Suspension due to the Detection of Illicit Discharge. Any person discharging to the VBWD's MS4 in violation of this Rule may have their MS4 access terminated if such termination would abate or reduce an illicit discharge. The VBWD shall notify a violator of the proposed termination of its MS4 access. The violator may petition the VBWD for a reconsideration and hearing. A person commits an offense subject to enforcement if the person reinstates MS4 access to facilities terminated pursuant to this Section, without the prior approval of the VBWD.

4. Monitoring of Discharges

A. **Applicability.** This section applies to all facilities that have stormwater discharges associated with industrial activity, including construction activity.

B. **Access to Facilities**

i. The VBWD shall be permitted to enter and inspect facilities subject to regulation under this Rule as often as may be necessary to determine compliance with this Rule. The discharger shall make the necessary arrangements to allow access to representatives of the VBWD.

ii. Facilities operators shall allow VBWD ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge stormwater, and the performance of any additional duties as defined by state and federal law.

iii. If the VBWD has been refused access to any part of the premises from which stormwater is discharged; VBWD may seek issuance of a search warrant from any court of competent jurisdiction.

5. **Requirement to Prevent, Control, and Reduce Stormwater Pollutants by the Use of Best Management Practices.** The owner or operator of a commercial or industrial establishment shall provide, at their own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses through the use of these structural and non-structural BMPs. Any person responsible for a property or premise, which is, or may be, the source of an illicit discharge, may be required by VBWD to implement, at said person's expense, additional structural and non-structural BMPs to prevent the further discharge of pollutants to the municipal separate storm sewer system.

6. **Watercourse Protection.** Every person owning property through which a watercourse passes shall keep and maintain that part of the watercourse within the property free of trash, debris, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures shall not become a hazard to the use, function, or physical integrity of the watercourse.

7. **Notification of Spills.** Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which result or may result in illegal discharges or pollutants discharging into stormwater, the storm drain system, or water of the U.S., said person shall take all necessary steps to ensure the containment and cleanup of such release. In the event of such a release of hazardous materials, said person shall immediately notify emergency response agencies of the release. In the event of a release of non-hazardous materials, said person shall notify VBWD in person or by phone or facsimile no later than the next business day following discovery of the release.

8. **Enforcement.**

A. **Notice of Violation.** Whenever the VBWD finds that a person has violated a prohibition or failed to meet a requirement of this Rule, VBWD may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:

i. The performance of monitoring, analyses, and reporting;

ii. The elimination of illicit connections or discharges;

iii. That violating discharges, practices, or operations shall cease and desist;

iv. The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;

v. Payment of a fine to cover administrative and remediation costs; and/or

vi. The implementation of source control or treatment BMPs.

B. **Abatement.** If abatement of a violation and/or restoration of affected property are required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work shall be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

C. **Appeal of Notice of Violation.** Any person receiving a Notice of Violation may appeal the determination of the VBWD. The notice of appeal must be received within 5 days from the date of the Notice of Violation. Hearing on the appeal before the VBWD Board of Managers shall take place within 15 days from the date of receipt of the notice of appeal. The decision of the VBWD shall be final.

D. **Enforcement Measures after Appeal.** If the violation has not been corrected pursuant to the requirements set forth in the Notice of Violation, or, in the event of an appeal, within 3 days of the decision of the VBWD Board of Managers, then representatives of the VBWD are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent, or person in possession of any premises to refuse to allow VBWD or its agents to enter upon the premises for the purposes set forth above.

E. **Cost of Abatement.** VBWD may assess costs for abatement. Within 30 days after abatement of the violation, the VBWD shall notify the property owner of the cost of abatement, including administrative costs. The property owner may file a written protest objecting to the amount of the assessment within 10 days. If the amount due is not paid within a timely manner as determined by the decision of the municipal authority or by the expiration of the time in which to file an appeal, the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment.

F. **Injunctive Relief.** It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this Rule. If a person has violated or continues to violate the provisions of this Rule, the VBWD may petition for a preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

G. **Violations Deemed a Public Nuisance.** In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this Rule is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

H. **Relation to Other Rules.** None of the enforcement provisions of this Rule shall abridge or alter the right of the VBWD to seek remedies provided for under Rule 1 herein.

I. **Exceptions**

i. The following discharges are exempt from discharge prohibitions established by this Rule: water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, non-commercial washing of vehicles, natural riparian habitat or wetland flows, swimming pools (if dechlorinated - typically less than one PPM chlorine), street wash water, and firefighting activities.

ii. Discharges specified in writing by the VBWD as being necessary to protect public health and safety.

iii. Dye testing is an allowable discharge, but requires a verbal notification to the VBWD prior to the time of the test.

iv. Any non-stormwater discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm drain system.

Rule 7: Groundwater Management

Policies

1. Negative impacts (e.g., reduced flow to surface water bodies, lowered lake or wetland levels, well interference) to groundwater dependent resources will be prevented through permit review, community plan review, and education efforts.

2. Negative impacts (e.g., flooding) to surface waters due to groundwater quality mitigation efforts (e.g., pump-out systems) will be prevented through permit review, community plan review, and education efforts.

Standards

1. See other Rules, including but not limited to Rule 2, Rule 4, and Rule 5.

Rule 8: Individual Sewage Treatment Systems

Policies

1. Since septic systems are already regulated by the MPCA, the counties and the communities, VBWD will not take on this role, but VBWD will cooperate with other units of government to address specific concerns or issues.

2. VBWD supports Washington County's requirement that septic systems not be placed within drainage easements, which effectively prevents installation of septic systems within the 100-year floodplain of VBWD waters. (See Rule 5, Standard 3A.)

Rule 9: Water Appropriations

Policies

1. To manage the water resources of the VBWD, the Managers must be informed of the proposed appropriation of ground and/or surface waters.

2. The Managers require that the effect of the proposed appropriation be defined before approval is granted.

Standards

1. In all cases of appropriation of waters requiring a DNR permit, a copy of the permit application must be filed with the Managers for their review and comment.

2. The Managers will act on the DNR permit application within 30 days, or as required by the DNR, after receipt of the complete application.

Policies

1. The Application Fee is to be used to defray the VBWD's review, inspection, and administration costs. The amount of the application fee is set by the Managers and can be found by contacting the VBWD. Any costs incurred by the VBWD greater than the submitted fee will be billed to the applicant.

2. No fee is required by governmental units applying for a VBWD permit.

3. Any unused portion of the fee over $500 will be returned to the permit holder.

Rule 11: Sureties and Performance Bonds

Policies

1. To assure compliance with these Rules, the Managers may require the posting of a performance bond or other security where it is shown to be reasonable and necessary under the particular circumstances of any permit application filed with the VBWD.

2. Where a municipality or other governmental agency includes in its requirements that the applicant furnish a performance bond or other security, the VBWD may require an additional performance bond from the applicant.

3. At the Managers' discretion, the VBWD may reduce the amount of the security held for a project if the permit holder requests a reduction with documentation of the project's progress.

Rule 12: Variances

Policies

1. The Managers may grant variances from these Rules when they find that due to unique physical conditions of the land or waters involved, extraordinary and unnecessary hardship may result from strict compliance. Such variances will not have the effect of nullifying the intent and purpose of these Rules, or the VBWD Plan.

2. In considering the variance, the Managers shall consider the effect upon the entire VBWD and VBWD Plan.

3. An application for a variance shall be submitted to the Managers and shall document the exceptional conditions and peculiar difficulties claimed and resulting impacts from approval of the variance.

4. The Managers shall approve or deny the variance within 60 days of receipt of a complete variance application.

Rule 13: Local Government Responsibilities

Policies

1. The communities are responsible for:

A. Land use plans and zoning ordinances

B. Local watershed management plans

C. Shoreland and floodplain ordinances

The Managers will review these plans and documents to minimize adverse impacts to the waters of the VBWD and to ensure regional water management needs are included in the local watershed management plans.

2. Communities are responsible for enforcing minimum building elevations established by the VBWD.

3. Communities are responsible for maintaining stormwater management facilities where easements covering the facility have been granted to the community or to support the VBWD in using the easement to maintain the facility.

4. Communities shall submit copies of developers' agreements and/or grading permits of proposed subdivisions and development plans for review by the VBWD.

5. In cases of mining operations, a copy of the permit application must be filed with the Managers for their review and approval.

Appendices

Appendix A

Stormwater Volume Checklist

Stormwater Volume Checklist

The completion of this checklist is required for all projects requiring a permit from Valley Branch Watershed District.

For detailed information on stormwater management techniques and policies, see the Alternative Stormwater Best Management Practices Guidebook, published by Valley Branch Watershed District, April 2000. Call 952-832-2622 to receive a copy.

Project Name:

Site Design to Reduce Stormwater Runoff	Yes	No	If No, Why Not?
Building Locations			
Are stable natural drainageways, swales, and ravines preserved under proposed conditions?			
Are buildings set back 40 feet from the top of natural slopes greater than 18% over a length of 100 feet in the absence of stricter bluff ordinances?			
Cul-de-Sac Design			
Are all proposed cul-de-sac radii less than 39 feet?			
Are the centers of proposed cul-de-sacs unpaved, depressed islands (with rainwater gardens) with minimum diameters of 20 feet?			
Driveway Design			
Are proposed houses set back no more than 20 feet from the front property line?			
Are proposed long driveways limited to only 12 feet wide at the street?			
Are proposed driveways crowned and/or draining to green areas/rainwater gardens?			
Are proposed driveways shared?			
Are wheel track driveways being proposed?			
Are driveways proposed to be constructed with pervious pavement?			
Are turfed geotextile pavers proposed for summer temporary overflow parking along driveways?			
Parking Lot Design			
Are proposed 90-degree parking stalls 9 feet wide or less?			
Are proposed 90-degree parking stalls 18 feet long or less?			
Are 30% of the proposed spaces dimensioned for compact cars only?			
Are turfed geotextile pavers proposed for summer spillover parking areas?			
Are parking lots proposed to be constructed with pervious pavement?			
What is the minimum number of parking stalls required by the city? (please fill in number)			
What is the maximum number of parking stalls required by the city? (please fill in number)			
How many parking stalls are proposed? (please fill in number)			
Are the minimum number of parking stalls being proposed?			
Have the total number of proposed parking stalls been reduced because of shared parking with a nearby business?			
Will the impervious areas be disconnected to promote filtration and infiltration?			
Will the parking lot drain into infiltration islands/rainwater gardens?			
Will snow from the parking lot be plowed and stored in pervious areas?			
Street Design			
Are proposed streets crowned and curbless?			
Will pervious pavement be used?			
Will runoff be directed to vegetated swales and infiltration basins/rainwater gardens?			
Will perforated subsurface pipes, tanks, and storage systems be constructed?			
Will parking be needed and allowed on both sides, one side, or not at all on the streets? (please fill in answer)			
Are low-volume residential streets a maximum of 24 feet wide when parking & grass shoulders are proposed on both sides or when parking is not allowed?			
Are residential minor streets a maximum of 28 feet wide?			
Are residential collector streets a maximum of 31 feet wide?			
Path/Trail Design			
Will paths and sidewalks be constructed with porous material (wood chips or pervious pavement)?			
What is the narrowest width the city allows? (please fill in width)			
What is the width of proposed trails? (please fill in width)			
Rooftop Runoff			
Will 100% of the roof runoff be directed to permeable surfaces?			
Will rooftop storage be used?			
Will a green roof be constructed?			
Will rain barrels/cisterns be used or required?			
Continued on back			

Planting Design	Yes	No	If No, Why Not?
Do the specifications include loosening soils to a depth of 24 inches to a maximum compaction of 85% standard proctor density prior to planting?			
Do the specifications include tilling the upper 10 inches of soils prior to planting?			
Are islands proposed to be vegetated instead of paved?			
Does the planting plan include trees that at maturity will provide canopy over at least 50% of the paved area?			
Are deep-rooted trees, shrubs, wildflowers, and grasses planned in at least 25% of the project's green space?			
Open Space Subdivision Design			
Is 50% or more of the site preserved as natural area?			
Best Management Practices for Use in Development			
Buffers			
What is the proposed buffer zone along streams, wetlands, and lakes? (fill in width)			
Vegetated Swales			
Are vegetated swales proposed to convey stormwater?			
Will vegetated swales have native, deep-rooted vegetation?			
Vegetated Filter Strips			
Are filter strips proposed for sheet flows from impervious areas?			
Infiltration Basins			
Are infiltration basins proposed for the project?			
Was the infiltration rate of the soils at the proposed infiltration basins measured/tested?			
Was a soil boring conducted at all proposed infiltration basins?			
Using the Unified Soil Classification System, what is the classification of the least permeable soil layer at the proposed infiltration basin? (please fill in)			
What is the Hydrologic Group classification of the soil at the proposed infiltration basins? (please fill in)			
Is the base of the infiltration basin at least 3 feet above bedrock and the water table, or an impermeable layer?			
What is the depth to bedrock from the bottom of the proposed infiltration basin? (please fill in)			
Is the basin proposed to be planted with deep-rooted vegetation?			
Is the basin designed to treat the VBWD-required runoff volume and to infiltrate the stormwater within 48 hours?			
Is the basin set back at least 10 feet from all property lines?			
Is the basin set back at least 10 feet from building foundations?			
Is the basin set back at least 50 feet from private wells/public water wells?			
Is the basin set back at least 35 feet from septic systems?			
What is the drainage area to the infiltration basin? (please fill in)			
For infiltration basins with drainage areas less than two acres, will at least 50% of the inflow volume to the infiltration basin be pre-treated?			
For infiltration basins with drainage areas greater than two acres, will at all of the inflow volume to the infiltration basin be pre-treated?			
Will the proposed infiltration basin be staked off and marked during construction to prevent compaction?			
Who will maintain the infiltration basin? (please write name and attach contract)			
Sand Filters			
Are sand filters proposed on the site?			
Who will maintain the sand filter? (please write name and attach contract)			
Is the sand filter designed to accommodate 3/4-inch of runoff from its impervious drainage area?			

Appendix B

Maintenance Agreements

STORM WATER QUALITY TREATMENT FACILITY
MAINTENANCE AGREEMENT

THIS AGREEMENT is made this _____ day of _____, 20____ by and between the Valley Branch Watershed District (hereinafter referred to as "VBWD") and _____ (a Minnesota corporation or an individual) (hereinafter referred to as "Owner(s)") with reference to the following facts and circumstances:

A. _____ is/are the fee Owner(s) of certain real property situated in the city of _____, _____ County, Minnesota, legally described as follows:

(Type Legal Description Here)
(hereinafter referred to as "Property")

B. As a condition of its approval of the development of the Subject Property, VBWD has required that the Owner(s) enter into an agreement for the maintenance of the Storm Water Quality Treatment Facility for the Property. This Storm Water Quality Treatment Facility is located within the boundaries of the Property on construction plans prepared by Owner(s).

C. The Owner(s) desires to set forth its agreement with respect to the maintenance of the Storm Water Quality Treatment Facility and the cost of such maintenance.

NOW, THEREFORE, in consideration of the foregoing facts and circumstances, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

1. The Owner(s) shall grant to VBWD the necessary easements and rights-of-way and/or maintain perpetual access from public rights-of-way to the water quality unit for VBWD, its agent or contractor.

2. VBWD shall record this Agreement with the Recorder of the County of Washington, Minnesota. The Owner(s) shall pay a $100.00 processing and filing fee to VBWD upon submission of this Agreement.

3. The Owner(s), for itself and respective successors and assigns, hereby waives any statutory right which it may have to contest any assessment for costs hereunder by VBWD.

4. Until such time as the permit with VBWD for the project is closed out:

    4a. For the purposes of this Agreement, maintenance of the Storm Water Quality Treatment Facility shall include, but not be limited to, annual inspection, annual maintenance reporting and certification by a professional engineer (provided by Owner(s)) that the facility is functioning in accordance with the approved plans and minimum maintenance standards set forth by VBWD as set forth and defined in Exhibit A.

    4b. If necessary, Owner(s) shall undertake at its expense periodic dredging or removal of silt buildup and other deposited materials within the Storm Water Quality Treatment Facility to maintain its treatment capacity and proper operation, as established in the

construction plans. Any maintenance needs required by VBWD shall occur within 30 days of the certified inspection.

4c. Upon receipt of the annual certification of inspection and maintenance report, VBWD may inspect the facility to ensure that the facility meets the minimum maintenance standards. Annual inspection of the facility shall not render VBWD responsible for identifying ongoing maintenance needs.

4d. The Owner(s) shall be solely responsible for the maintenance of the facility, and shall bear all costs of such maintenance. If the Owner(s) do(es) not undertake the necessary maintenance within thirty (30) days of notification by VBWD, VBWD may contract such maintenance, but the costs reasonably incurred by VBWD for contracting such maintenance shall be reimbursed to VBWD by the Owner(s).

5. After the VBWD closes the permit, the Owner(s) for itself and respective successors and assigns, will remain responsible for vegetation management of all stormwater management facilities, including but not limited to weeding and maintaining the originally planned and installed vegetation species and varieties.

6. The terms and conditions of this Agreement shall be binding upon, and shall inure to the benefit of, the parties hereto and their respective successors and assigns.

IN WITNESS WHEREOF, the parties hereto have caused this document to be executed as of the day and year first above written.

VALLEY BRANCH WATERSHED DISTRICT

By_____
Its President

By_____
Its Secretary

_____
Owner

_____
Owner

STATE OF MINNESOTA)
) ss
COUNTY OF WASHINGTON)

The foregoing was acknowledged before me this _____ day of _____, 20____, by Lincoln Fetcher and Donald Scheel, respectively the President and Secretary of the Valley Branch Watershed District, State of Minnesota.

_____
Notary Public

STATE OF MINNESOTA)
) ss
COUNTY OF WASHINGTON)

The foregoing was acknowledged before me this _____ day of _____, 20____, by _____.

_____
Notary Public

DRAFTED BY:
LAWSON, MARSHALL, McDONALD,
GALOWITZ & WOLLE, P.A.
Lawyers
10390 39th Street North
Lake Elmo, MN 55042
Telephone: (651) 777-6960
(BW)

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Exhibit A

Minimum Maintenance Standards for Stormwater Quality Treatment Facilities

1) Infiltration Facilities
   a) Debris
      i) Clear litter and vegetation debris from the contributing drainage area
      ii) Clean bottoms of the facilities
      iii) Clear debris from inflow pipes and/or inlet areas
      iv) Clear debris from overflows
   b) Forebays
      i) Remove trapped sediment if less than 50% of storage volume is remaining
   c) Vegetation
      i) Mow and fertilize as per Operations and Maintenance Plan
      ii) Remove undesirable vegetation and restore any dead vegetation that was installed as part of the project
      iii) Correct/stabilize any erosion problems
   d) Sediment Removal
      i) Remove any sediment that has accumulated in basin
      ii) Remove winter sand deposition every spring
   e) Inlets/Outlets
      i) Repair as needed
      ii) Remove any sediment or oil from catch basins and/or manholes
   f) Filter Bed
      i) Remove and replace upper layers of soil if basin does not drain down within 72 hours.
2) Stormwater Ponds
   a) Debris
      i) Clear litter and vegetation debris from contributing drainage area
      ii) Remove floatable debris in and around the pond area including, but not limited to: oils, gases, debris and other pollutants.
      iii) Clear litter from pond inflow pipe
      iv) Clear litter from pond outlet
   b) Vegetation
      i) Maintain landscape adjacent to the pond per original design, including but not limited to: maintenance of the buffer strip and other plant materials as per original plan design.
      ii) Remove undesirable vegetation and restore any dead vegetation that was installed as part of the project.

iii) Correct/stabilize any erosion problems

c) Sediment Removal

i) Remove sediment if less than 50% of storage volume is remaining

d) Inlets/Outlets

i) Repair as needed

ii) Remove any sediment from sump catch basins and/or manholes

iii) Remove debris from trashracks

e) Emergency Overflow

i) Clear spillway of debris, obstructions, and inappropriate vegetation

ii) Repair any cracking, bulging, or sliding

iii) Maintain and correct as needed all erosion control measures, including but not limited to riprap storm sewer outlets

Disposal of materials shall be in accordance with local, state and federal requirements as applicable.

Clean up and maintenance shall occur immediately after a spill takes place. Appropriate regulatory agencies should also be notified in the event of a spill.

Annual inspection, maintenance reporting and certification shall be conducted by a professional engineer (Provided by Owner). Information must be submitted to the VBWD annually.

Appendix C

Design Sequence Flow Chart

FIGURE C-1: DESIGN SEQUENCE FLOW CHART

Version 1, 8/28/2013
Adapted from MIDS

Define Performance Goal

New, Nonlinear Developments and Reconstruction/Redevelopment Projects: Retain on site 1.1 inches of runoff from the new and/or fully reconstructed impervious surfaces

Linear Projects: Retain on site the larger of
- 0.55 inches of runoff from the new and fully reconstructed impervious surfaces
- 1.1 inches of runoff from the net increase in impervious surfaces

Conduct Site Review:
- Aerial Photos and Topographic Maps
- County Soil Surveys and other Soil Information as Available
- County Geologic Atlas
- Local Groundwater Levels
- DWSMA and Wellhead Protection Maps
- FEMA and Local Floodplain Maps
- Soil Borings and Site Survey
- MPCA Listing of Potentially Contaminated Sites
- Phase 1 and 2 Environmental Site Assessments
- TMDLs and Local Water Quality Standards
- Wetland Delineations, MNRAM Assessments, and Wetland Classifications
- Proposed Conditions, Conceptual/Preliminary Site Design
- Local zoning and land use requirements/ordinances, including stormwater rate control requirements
- Communication with Local Landowners, LGU, or Others Knowledgeable about the Site
- Site Inspection

Does the project create 6,000 square feet or more of new and/or fully reconstructed impervious surfaces? (See Note 1)
- No → VBWD Rule 2, Standard 6 does not apply
- Yes → Is the project linear?
  - Yes → Are there restraints due to lack of available ROW, off site drainage and/or rate control requirements?
    - Yes → Can a reasonable effort to acquire all of the ROW be accomplished?
      - No → Is FTO1 feasible?
        - Yes → Select FTO 1; Provide documentation of offsite run on to project area; Provide documentation of lack of right-of-way
        - No → Is FTO 1b & 2a feasible?
          - Yes → Select FTO 1b and 2a; Provide documentation of offsite run on to project area; Provide documentation of lack of right-of-way
          - No → Is FTO 2 feasible?
            - Yes → Select FTO 2; Provide documentation of offsite run on to project area; Provide documentation of lack of right-of-way
            - No → Discuss with VBWD Board of Managers whether FTO 3 will be acceptable
      - Yes → (No FTO selected)
    - No → (No FTO selected)
  - No → Are there zoning and land use requirements (density, parking, setbacks, etc.) that make the Performance Goal not feasible? (See Note 2)
    - Yes → Is BMP relocation feasible?
      - No → Is FTO 1 feasible?
        - Yes → Select FTO 1; Provide regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal
        - No → Is FTO 1b and 2a feasible?
          - Yes → Select FTO 1b and 2a; Provide regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal
          - No → Is FTO 2 feasible?
            - Yes → Select FTO 2; Provide regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal
            - No → Discuss with VBWD Board of Managers whether FTO 3 will be acceptable
      - Yes → (No FTO selected)
    - No → Is the site located in a DWSMA, wellhead protection area, or within 200 feet of a drinking well?
      - Yes → Is infiltration in this location acceptable to VBWD, owner, and operator?
        - No → Is FTO 1b feasible?
          - Yes → Select FTO 1b; No infiltration practices allowed; Explore non-infiltration volume reduction practices; Provide DWSMA or well location map
          - No → Select FTO 2; No infiltration practices allowed; Explore non-infiltration volume reduction practices; Provide DWSMA or well location map
        - Yes → (No FTO selected)
      - No → Are there existing or proposed structures or infrastructure (e.g., rate control BMPs, utilities, buildings, roadway, easements) that make the Performance Goal not feasible?
        - Yes → Is BMP relocation feasable?
          - No → Is FTO 1 feasible?
            - Yes → Select FTO 1; Provide regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal
            - No → Is FTO 1b and 2a feasible?
              - Yes → Select FTO 1b and 2a; Provide regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal
              - No → Is FTO 2 feasible?
                - Yes → Select FTO. 2; Provide regulations, and/or cost estimates documenting infeasibility of meeting the original Performance Goal
                - No → Discuss with VBWD Board of Managers whether FTO 3 will be acceptable
          - Yes → (No FTO selected)
        - No → Is karst present on site?
          - Yes → Conduct detailed site investigation → Is karst present within 1000' of proposed BMP location?
            - Yes → Is BMP relocation onsite to a location without karst feasible?
              - No → Is FTO 1b feasible?
                - Yes → Select FTO 1b; No infiltration practices allowed; Explore non-infiltration volume reduction practices; Provide soil borings or report from a professional geologist or geotechnical engineer.
                - No → Select FTO 2; No infiltration practices allowed; Explore non-infiltration volume reduction practices; Provide soil borings or report from a professional geologist or geotechnical engineer.
              - Yes → (No FTO selected)
            - No → (No FTO selected)
          - No → Is shallow groundwater or shallow bedrock present on site?
            - Yes → Conduct detailed site investigation (i.e., borings, excavations, consultation with a professional geologist). → Is there >3 feet of soil depth (> 10 feet is preferred) from bottom of BMP to bedrock and groundwater?
              - No → Is BMP relocation onsite to avoid shallow groundwater and bedrock feasible?
                - No → Can BMP be raised?
                  - Yes → Raise BMP enough to ensure 3 feet (preferably 10 feet) of soil between bottom of BMP and top of bedrock and groundwater.
                  - No → Is FTO 1b feasible?
                    - Yes → Select FTO 1b; No infiltration practices allowed; Explore non-infiltration volume reduction practices; Provide soil borings or report from a professional geologist or geotechnical engineer.
                    - No → Select FTO 2; No infiltration practices allowed; Explore non-infiltration volume reduction practices; Provide soil borings or report from a professional geologist or geotechnical engineer.
                - Yes → (No FTO selected)
              - Yes → (No FTO selected)
            - No → Is there presence of contaminated soils and/or groundwater, or hotspot runoff?
              - Yes → Can hotspot or contamination be isolated or remediated to mitigate risk of increased contamination?
                - No → Is FTO 1b feasible?
                  - Yes → Select FTO 1b; No infiltration practices allowed; Explore non-infiltration volume reduction practices; Provide Phase I or II ESAs, or other documentation of potential contamination or hotspot runoff; Provide documentation of extent of contamination and remediation alternatives considered
                  - No → Select FTO 2; No infiltration practices allowed; Explore non-infiltration volume reduction practices; Provide Phase I or II ESAs, or other documentation of potential contamination or hotspot runoff; Provide documentation of extent of contamination and remediation alternatives considered
                - Yes → (No FTO selected)
              - No → Are there very low infiltrating soils (<0.2 inches per hour)?
                - Yes → Is BMP relocation onsite to a higher-infiltrating location feasible?
                  - No → Can BMP be sized to drain dry within 48 hours (24 hours in locations that are listed in Rule 2, Standard 6Eiii)?
                    - No → Provide soil boring or infiltration test results documenting low-infiltrating soils → Is FTO 1 (lower volume control standard) feasible, allowing the BMP to drain within 48 hours (24 hours in locations listed in Rule 2, Standard 6Eiii)?
                      - No → Is FTO 1b feasible?
                        - Yes → Select FTO 1b; No infiltration practices allowed; Explore non-infiltration volume reduction practices; Provide soil boring or infiltration test results documenting high-infiltrating soils
                        - No → Select FTO 2; No infiltration practices allowed; Explore non-infiltration volume reduction practices; Provide soil boring or infiltration test results documenting high-infiltrating soils
                      - Yes → Select FTO 1; Provide soil boring or infiltration test results documenting high-infiltrating soils
                    - Yes → (No FTO selected)
                  - Yes → (No FTO selected)
                - No → Are there very high infiltrating soils (>8 inches per hour)? (See Note 3)
                  - Yes → Is BMP relocation onsite to a lower-infiltrating location feasible?
                    - No → Can subgrade be modified to slow the rate of infiltration to less than 8 inches per hour?
                      - No → Is FTO 1b feasible?
                        - Yes → Select FTO 1b; No infiltration practices allowed; Explore non-infiltration volume reduction practices; Provide soil boring or infiltration test results documenting high-infiltrating soils.
                        - No → Select FTO 2; No infiltration practices allowed; Explore non-infiltration volume reduction practices; Provide soil boring or infiltration test results documenting high-infiltrating soils.
                      - Yes → (No FTO selected)
                    - Yes → (No FTO selected)
                  - No → Are there adverse surface water hydrologic impacts from infiltration practices (e.g., Table D-2 Hydrologic Guidelines, impacting a perched wetland, etc.)?
                    - Yes → Can the BMP be relocated onsite and/or redesigned to avoid adverse hydrologic impacts?
                      - No → Select FTO 1b (or FTO 2, if FTO 1b is not feasible) while avoiding adverse hydrologic impacts; Maximize infiltration BMPs to treat up to the 0.55 inch goal, if possible; Explore non-infiltration volume reduction practices; Provide report documenting potential hydrologic impacts from infiltration on the site, prepared by registered engineer, hydrologist, or wetlands specialist.
                      - Yes → (No FTO selected)
                    - No → **Complete Design Using Performance Goal** (As modified by FTO Alternatives, if applicable)

Flexible Treatment Options (FTO)

The Flexible Treatment Options (FTO) alternatives presented here should be employed when the Performance Goal is not feasible and/or allowed. The designer should document the reasons why the Performance Goal and rejected FTO alternatives are not feasible and/or allowed.

FTO 1
Applicant attempts to comply with the following conditions:
- 1a Achieve at least 0.55" volume reduction goal, and
- 1b Remove 75% of the annual TP load, and
- 1c Options considered and presented shall examine the merits of relocating project elements to address, varying soil conditions and other constraints across the site

FTO 2
Applicant attempts to comply with the following conditions:
- 2a Achieve volume reduction to the maximum extent practicable (as determined by the VBWD), and
- 2b Remove 60% of the annual TP load, and
- 2c Options considered and presented shall examine the merits of relocating project elements to address, varying soil conditions and other constraints across the site.

FTO 3
Off-site mitigation (including banking or cash or treatment on another project, as determined by the VBWD) equivalent to the volume reduction performance goal can be used to protect the receiving water body. Off-site compliance and banking credits shall be achieved through a method that protects the receiving water.

Notes:
- A. Volume reduction techniques considered shall include infiltration, reuse & rainwater harvesting, and canopy interception & evapotranspiration and/or additional techniques included in the MIDS calculator or the Minnesota Stormwater Manual.
- B. Applicant shall document the flexible treatment options decision sequence, following the order of alternatives presented here.
- C. For FTO 2, the applicant is encouraged to use BMPs that reduce volume. Secondary preference is to employ filtration techniques, followed by rate control BMPs.

Notes:

(1) Fully reconstructed impervious surfaces: Areas where impervious surfaces have been removed down to the underlying soils. Activities such as structure renovation, mill and overlay projects and other pavement rehabilitation projects that do not alter the underlying soil material beneath the structure, pavement or activity are not considered full reconstruction. In addition, other maintenance activities such as catch basin and pipe repair/replacement, lighting, and pedestrian ramp improvements shall not be considered fully reconstructed impervious surfaces. Reusing an existing building foundation and re-roofing of an existing building are not considered fully reconstructed.

(2) This is not an exhaustive list.

(3) Soils that infiltrate too quickly may not provide sufficient pollutant removal before the infiltrated runoff enters groundwater.

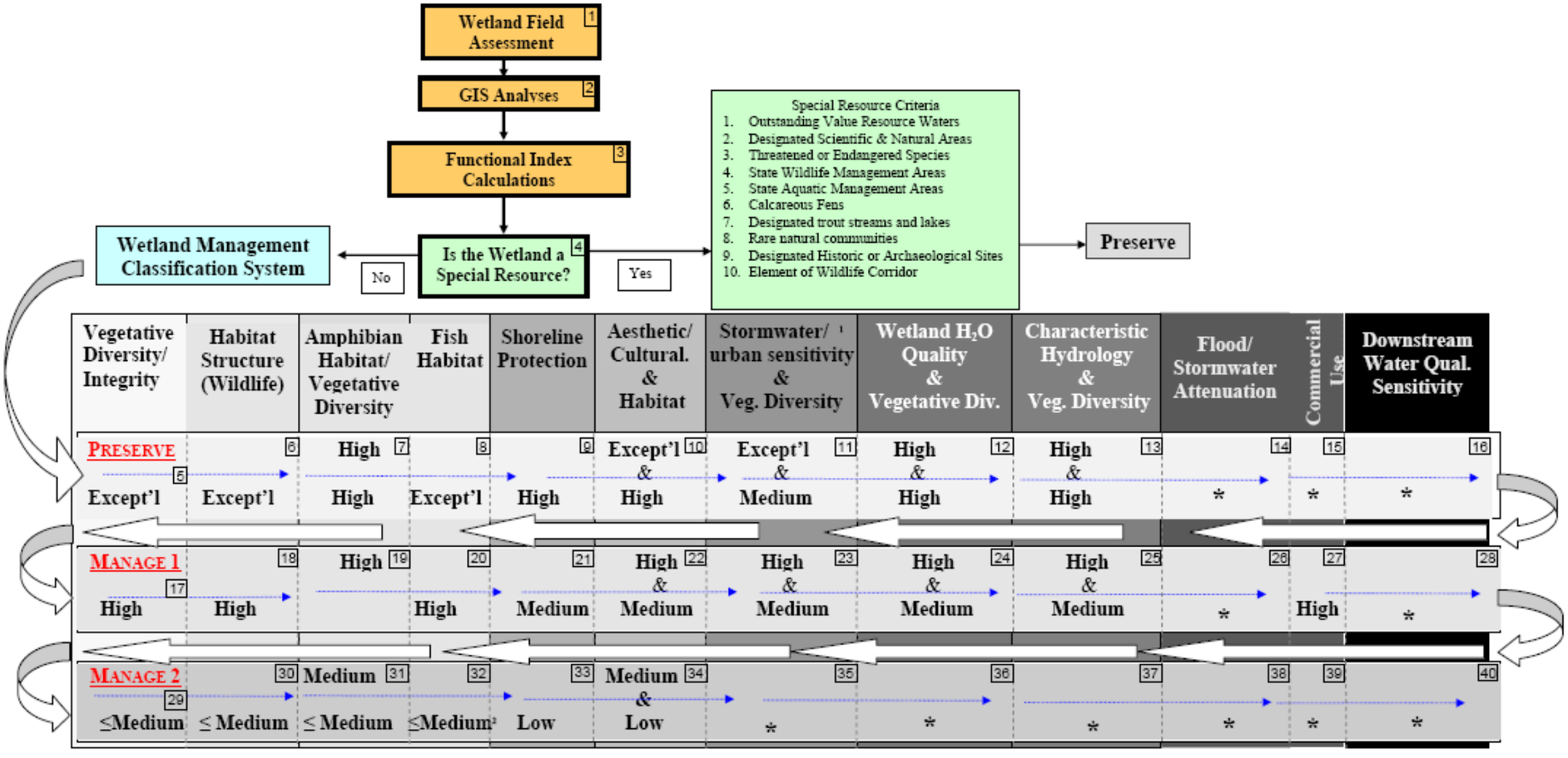
Appendix D

Wetland Inventory and Functional Assessment and Classification

Figure D-1

Wetland Management Classification Flowchart

Each wetland will be ranked into a Wetland Management group by the highest rated function for the wetland.
Follow the arrows through numbered boxes in progression through the tables; classify wetlands into the first group that applies.



Stormwater Pond — **A stormwater pond is a pond constructed in upland with a permanent pool, the purpose of which is to treat stormwater runoff.**

*** This rating does not apply here.**

Table D-2
WETLAND MANAGEMENT STANDARDS AND GUIDELINES[1]
Valley Branch Watershed District

Management Class	Average Buffer[2,3,4]	Hydrologic Guidelines
A-Preserve	100 feet Monuments required marking buffer edge.	*Bounce (10-year, 24-hour)*: Existing *Inundation*[5] *(1- & 2-year, 24-hour):* Existing *Inundation*[5] *(10-year, 24-hour)*: Existing *Runout Control*:[6] No Change Maintain existing hydrology: (The runoff volume flowing into the wetland from a 2-year 24-hour event cannot be changed by more than 10%[7]) Encourage infiltration and reduced impervious BMPs Conduct water budget analysis
B-Manage 1	75 feet Monuments required marking buffer edge.	*Bounce (10-year, 24-hour)*: Existing + 0.5 feet *Inundation*[5] *(1- & 2-year, 24-hour):* Existing plus 1 day *Inundation*[5] *(10-year, 24-hour)*: Existing + 7 days *Runout Control*:[6] No Change Maintain existing hydrology: (The runoff volume flowing into the wetland from a 2-year 24-hour event cannot be changed by more than 10%[7]) Encourage infiltration and reduced impervious BMPs
C-Manage 2	50 feet	*Bounce (10-year, 24-hour)*: Existing + 2.0 feet *Inundation*[5] *(1- & 2-year, 24-hour):* Existing plus 5 days *Inundation*[5] *(10-year, 24-hour)*: Existing + 14 days *Runout Control*:[6] 0 to 2.0 feet above existing runout Runoff volume flowing into the wetland from a 2-year 24-hour event cannot be changed by more than 25%[7]

1 Modified from Minnesota Routine Assessment Method For Evaluating Wetland Functions, Version 3.0 (MNRAM).

2 Buffers are unmowed, naturalized strips of vegetation around the perimeter of the wetland. Buffers shall be provided during development or redevelopment. Buffer widths will be measured from the delineated wetland boundary, the OHW, or the normal water level, whichever is greater in elevation. See Rule 4 for details regarding buffers.

3 A minimum 25 foot vegetative buffer strip is required around the delineated wetland boundary or the OHW, whichever is greater in elevation.

4 The average buffer widths listed are within the ranges recommended by MNRAM.

5 Defined as the time period during which wetland water levels are above the outlet elevation following the prescribed storm event.

6 If currently landlocked, new outlet should be above delineated wetland boundary elevation.

7 This is not a guideline of MNRAM, but a VBWD standard meant to meet the intent of the Wetland Conservation Act's purpose of avoiding direct or indirect impacts from activities that destroy or diminish the quantity, quality, and biological diversity of wetlands. In lieu of the applicant submitting plans and calculations that show the hydrology of wetlands will not be negatively impacted due to the proposed project, a 5-year wetland monitoring plan shall be submitted and approved by the VBWD Engineer prior to construction. If wetlands are negatively impacted by hydrology changes due to the project, the applicant will need to replace the lost wetlands.

Appendix E

National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) for construction activities as administered by the Minnesota Pollution Control Agency

Link to website for National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) for construction activities as administered by the Minnesota Pollution Control Agency

http://www.pca.state.mn.us/index.php/view-document.html?gid=18984